Sign Systems Studies 41(4), 2013, 391–403

Semiotics and interdisciplinarity: Lotman's legacy

Laura Gherlone

Department of Communication and Social Research
Sapienza University of Rome
Via Salaria 113, 00198 Rome, Italy
E-mail: laura.gherlone@uniroma1.it

Abstract. A particular aspect of Juri Lotman's semiotic theory is, without a doubt, the acknowledgment of the impossibility of adopting a single scientific language for the comprehension of processes underlying cultural dynamics. In his last work, *Unpredictable Mechanisms of Culture*, Lotman underscores that natural sciences and humanities have to search for the unity of the incompatible through a profound meta-linguistic dialogue. This can happen only considering the reality in its antinomies, or as informed by a plurality of languages reciprocally aimed to express the real movement of objects – a heterogeneous and contradictory movement: hence, Lotman's suggestion (which is also his ethical legacy) that the Aristotelian polyhedral unity of science be returned to. The aim of this paper is to retrace Lotman's relationship with the ideas of science, scientificity and interdisciplinary method, stressing his last reflections concerning the urgency of returning to the Aristotelian unified structure of knowledge, or a form of knowledge in which different and never completely mutually translatable scientific languages coexist autonomously, while being in a dialogue.

Keywords: Juri Lotman, Gottfried Leibniz, scientific knowledge, oneness, interdisciplinarity, monad.

The unpredictable unity of differences

From its European beginnings, the science of semiotics came to be placed almost naturally in an interdisciplinary knowledge horizon which saw, on the one hand, the establishment of synchronic linguistics in the 1910–1920s and, on the other

http://dx.doi.org/10.12697/SSS.2013.41.4.01

hand, the emergence of structural anthropology in the 1940–1950s. With its formal structure and its analytical method, the so-called *generative semiotics* thus became a model for the Soviet branch (e.g., *Simpozium po strukturnomu izucheniju znakovyh sistem* in 1962, which was the first official semiotic meeting in the Soviet Union) emphasizing a *mathematically* objective approach in the study of language.

Inclined, however, towards a unifying (and typically Russian) outlook, Soviet semiotics tried from the outset not to adopt a fragmented vision of the world but instead attempted to create a bridge between the sciences and the humanities, over time going beyond the generative method – which remained an important base anyway. This attempt, which pointed to a unity based on an unbiased dialogue of scholarly perspectives, was initially achieved through a methodological trust in the hard sciences, a seemingly more objective and legitimate foundation for scholarly discourse (Lotman 1967: 107). From this perspective, a key role was played by the fascination that the Soviets felt with American cybernetics and logical empiricism, both of which transmitted the idea of a science founded on an objective (collective and individual) reason[1] – so without a Subject, in the manner of the anthropological school of Lévi-Strauss.

Only thirty years later, one of the main exponent of the so-called Tartu-Moscow School of Semiotics, Juri Lotman, definitively rejected this "engineering" model of the semiotic study of reality, proposing an approach based on scientific *polyglotism*, seen not as an epistemological lack of systematization and unification, but as the very nature of science that, like art, is both one and polyhedral[2] – art that, let us bear in mind, in Lotman's vision has always been the language paradigm of cultural dynamics. This approach is dictated by the fact that "just as different sciences comprehend different aspects of life and cannot be replaced by a single universal science, so different art forms create different mutually untranslatable images of reality" (Lotman 1994[1993]: 46–47). According to Lotman, in other words, interdisciplinarity is the path through which it is possible to obtain a complex vision of reality.

On the *last* page of his *last*, posthumous theoretical elaboration, *Unpredictable Mechanisms of Culture* (1993), Lotman (1994[1993]: 106) clearly states:

> The path on which science now finds itself opens up a unified perspective on the knowledge contained in various fields. In place of individual methods for the study of the biological or social, physical or historical aspects of the world that

[1] A logical-rational "I".

[2] This change of perspective is linked to the theoretical elaboration of the concept of "semiosphere" (1984), that is to say the immersive semiotic space in which man is in-formed, which is composed of infinite bundles of meaning in (real or potential) relationships of translation. This complex vision of culture inevitably results in a *unitas-multiplex* of languages (polyglotism) and in an epistemology of boundary, expressed by interdisciplinary dialogue.

> surrounds us, we are returning once again to the issues that worried Aristotle and the scholars of the Middle Ages: the *unified structure of scientific knowledge*. Along this path we encounter a fundamental problem: the relationship between the individual and the general. (Lotman 1994[1993]: 106)

In the first part of this paper, I will outline a brief genesis of the concept of the *unified structure of scientific knowledge*, namely of the relationship that links multiple and autonomous ways of understanding to the concept of *universum*. In the second part I will clarify the meaning of interdisciplinarity, an idea which, according to Lotman, should never become a "Tower of Babel" of human knowledge, but rather should rise up as a complex structure in which the individual and the general interpenetrate each other, thereby creating a prismatic unity.

Towards a vision of the oneness of reality

The need to give unity and coherence to intellectual experience has always been present in humans. Archetypical examples of this are the foundational myths, elaborated by man in order to explain the harmony[3] that seems to envelop him and reveals itself through the cosmological order.[4] Classical culture with its idea of *polis*[5] and Christian-medieval culture with its great theological *summae* are the first

[3] The word "harmony", from Greek *harmonia*, means disposition, proportion, and it derives from *harmozein*: to connect, to link.

[4] Hans Urs von Balthasar (1998[1961–1969]: 147–148) writes: "The world of myth was fundamentally dialogical: from the personal-divine sphere, glory radiates upon man who dares to interpret his temporal existence in this light. [...] It wasn't possible a becoming of myths by the understanding. [...] The knowledge is that through which man owns in himself the criteria of the verification, in his own reason".

See also Lotman and Uspenskij's "Myths – name – culture" (1973), in which they underline that mythological thought does not manifest a rational segmentation of reality (expressed by logical-mathematic coordinates of time and space), but rather an immersion/mirroring of a subject in the whole of the world, according to the isomorphic principle.

[5] The Greek political community, that provided civic order and required a precise behavioural *ethos*, was founded on *concord*, i.e., on the idea of unity in the diversity. Concord refers to the sense of a co-belonging characteristic of the *polis*. It looks for the agreement of different opinions and not solely for their identity. This socio-cultural model founded on community, which was destroyed in the 17th century, must be taken into account by the political theories that are constructed upon the concept of the individual in order to understand whence the Western dichotomy between the universal and the individual derives. Lotman dedicates many illuminating pages of his *Unpredictable Mechanisms of Culture* to this polarization, stressing the

complete expressions of this need that later becomes the study of a polymath model of consciousness and of man himself (the so-called *Universalgelehrte*). This study aims at the harmonization and integration of the rational-scientific vision of the world with the philosophical one.

During the Middle Ages, under the influence of the Aristotelian revival of Thomas Aquinas, an integration of knowledge was attempted under the meta-knowledge of theology; also, foundations were laid to the idea of *university* as a place of communal dialogue among various disciplines – an idea that was later fully developed by Renaissance anthropocentrism.

While on the one hand, this operation of interdisciplinary integration during modernity, through the rationalism of the Enlightenment, was completed by the writing of great encyclopedias, on the other hand there was a progressive detachment of scientific rationality from *sophia* (or wisdom) that began to assert itself – giving life to what, in the contemporary epoch, comes to be the sharp dichotomy between the natural sciences and the humanities. During the 17th and 18th centuries a steady compartmentalization of the research methods of various disciplinary branches could be observed. The increasing depth and breadth of understanding of these disciplines, first at a cosmological level and then at the anthropological and the biological levels, begins to make the returning of such knowledge to a single coherent and unified framework – the theological one – more difficult.

Although this leads to a fruitful and incremental specialization of human understanding in all its nuances, it also leads to a greater autonomy and fragmentation of the sciences. In modernity, knowledge, once represented as a tree with many branches (always, however, joined by the unity of the intellectual experience: the trunk), becomes a proliferation of worlds, separate, divided and impenetrable to one another.[6]

In this context, a figure of particular interest stands out, namely that of Gottfried W. Leibniz, one of the last *Universalgelehrte*[7] of modernity and an inspiring influence for Lotman. In the footsteps of Aristotle, Thomas Aquinas and the Scholastics, Leibniz suggests a model of knowledge in which the multiplicity of understandings

---

semiotic difference between collectivism (the "all whole", i.e. the degeneration of the community of the polis) and individualism (the "all individual").

[6] However, modernity reveals attempts of systematization, especially on the speculative level, and makes it both from the rationalist angle, assigning it to the unification of method (first with Descartes and then with Kant), and from the idealist angle, leaving to Spirit, Reason or History the task to reveal the role of parts within the whole: the knowledge is "one" because the spirit, the reason and the history are "one". That is to say modernity creates the conceptual premises, easily declining in praxis, of an idea of unity where differences are reset to zero, rather than kept, an idea that was strongly deconstructed by Lotman in his last works.

[7] Thanks to his eclecticism, in 1725 Leibniz was invited by Peter the Great to lay the foundations of the Russian Academy of Sciences.

has always to be founded on and anchored to the intellectual and moral unity of the "person", who is the integral experience of reality. The philosophical assumption of this model lies in the concept of the "monad", that is to say "what is one," a concept essential to Lotmanian semiotics.

The monad is the fundamental metaphysical reality of which the entire universe is made. Monads are simple, individual, unextended, self-sufficient substances expressing the primary unity of all things – or God, from whom they derive (Leibniz 1989a, theses 1–2; Leibniz 1989b, theses 54–65). In turn, each monad is a perpetual living "mirror" or image of the whole universe, whose primitive and necessary principle and ultimate reason is God. Each reflects in its particularity, from its own point of view, the entire universe (or the *perfect harmony* of divine design) and is in perfect interconnection, agreement and oneness with the reflections of all other monads (Leibniz 1989a, theses 12–13; 1989b, theses 54–65). In each of these "metaphysical atoms", constituting the wholeness of reality, the multiplicity of the universe is led back to unity, or rather compensated for by the oneness of the identity (*diversitas identitate compensata*).

By virtue of the utter likeness of monads mirroring the universe that keeps them all in an interlinked wholeness, the Leibnizian conception of knowledge is understood as encyclopedic and analogical.[8] It is encyclopedic because it is unitary even in its heterogeneity; and it is analogical because it endures due to proportional relationships of uni-similarity among the different ways of understanding of reality, reflections of the monads' various points of view. It is, moreover, a knowledge that tends to the principle of the *best*, in accordance with the perfection of its Generator.[9]

In spite of its speculative and heuristic fruitfulness, this complex vision of knowledge has, little by little, been lost. As said earlier, in the contemporary epoch the progressive (and legitimate) specialization of disciplines has been corroborated, leading at the same time to a fundamental self-referentiality of their epistemological foundations and creating an extremely fragmented universe of sciences. However, in the past decades there has been much discussion about a different approach to knowledge as a way able to explain the gnoseologic tension of the human intellectual unity and the increasing complexity of the descriptions of reality – a reality which is plural-integral and has to be expressible in scientific terms. Karl Jaspers (1989[1923]: 21) wrote about this:

---

[8] The origin of the word "analogy", as suggested by its Greek root *analogia*, is founded on the mathematic concept of "proportion" (a : b = c : d), which states a similarity due to an equality of relationships.

[9] Monads are imitations of the divine harmony, in proportion to the degree of perfection that they have with respect to their Generator (Leibniz 1989b[1714]: 219).

> Propelled as it is by our primary thirst for knowledge, this search is guided by our vision of the oneness of reality. We strive to know particular data, not in and for themselves, but as the only way of getting at that oneness. Without reference to the whole of being science loses its meaning. With it, on the other hand, even the most specialized branches of science are meaningful and alive. This oneness or wholeness of reality is not to be found in any one place. All I can ever know is a particular instance among an endless variety of things. Thus, what determines the actual direction of any inquiry is our ability to perpetuate, yet continuously to interrelate two elements of thought. One is our will to know the infinite variety and multitude of reality which forever eludes us. The other is our actual experience of the unity underlying this plurality. Still, that experience of unity cannot be had except as we face up to the fragmentary character of the human knowledge. (Jasper 1959[1923]: 21)

Currently, what seems to be emerging is not so much a nostalgic return to universal awareness, but rather the need for a knowledge that arises from the dialogical and unbiased "crossing" of different scientific experiences from the natural sciences to the humanities. It is what Roman Jakobson (1971[1967]: 655) calls "interdisciplinary teamwork", specifying that this approach should be based on "two complementary notions – autonomy and integration", which sometimes can "divert to a wrong end: either the salutary idea of autonomy degenerates into an isolationist bias, noxious as any parochialism, separatism, and apartheid, or one takes the opposite path and compromises the sound principle of integration by substituting a meddlesome heteronomy (alias "colonialism") for the indispensable autonomy" (Jakobson 1971[1967]: 656). This vision is confirmed also by Edgar Morin's epistemological concept of *unitas multiplex*, by virtue of which the whole and the parts, the unity and the multiplicity maintain a double but reciprocal identity, allowing both autonomy and integration in a wider vision of science (Morin 1982[1977]; 2007).

Unity and thirst for knowledge in Lotman. Following in Leibniz's footsteps

In this perspective, Lotman stands out. For him, semiotic science offers itself as one of the possible antidotes contributing to interdisciplinary dialogue, proposing itself as a possible path towards a complex understanding of reality based on the multifaceted unification of perspectives.

Lotman's 1974 essay "Artistic ensemble as daily space", which seemingly contemplates the uni-multiple dynamics of the arts, actually provides the model for a deeper understanding of his concept of cultural polyglotism (or cultural *unitas multiplex*).

Lotman (1998[1974]: 23) opens the essay[10] with the following words:

> Ancient myths claim that the Muses danced in a circle [*chorovod*]. Since every Muse possessed her own name, image, instrument and special art, the Greeks saw unfailingly a circle in Art, a wholeness of different but mutually necessary aspects proper to artistic activities. However, in modernity, the study of art took a different path. Separate disciplines for the studying of letters, theatre, figurative arts, cinema, music were created with each developing in isolation from the others. This approach had its own reasons. For one, it corresponded to artistic trends toward differentiation, namely the division in separated and internally independent spheres of artistic activity (a trend that was noticeable in the artistic development of the post-Renaissance and, above all, in the 19th century); for another, it allowed to highlight the specific aims of the study of every field of artistic human activity.

In order to explain how two different ways of expressing reality – unity and heterogeneity – can be in a successful dialogue, Lotman offers the fascinating image of the Muses' circle dance. According to him, this allegorical configuration not only expresses the uni-diversity of art in Ancient Greece, but also offers a general symbolic form of the unrecognized and underlying nature of modernity's knowledge, which is simultaneously particular and indivisible, plural and whole in Jaspers's words.[11]

What seems to interest Lotman in using the paradigm of artistic creativity is the fact that, in order to penetrate and understand the oneness of a cultural reality in an organic and unified way, many ways of expressing this reality are necessary. This must include the fact that these ways are autonomous, irreducible to one other, almost untranslatable yet reciprocally indispensable. Lotman (1998[1974]: 32) writes, referring to art:

> […] what interests us is not whether the general features of artworks, pictures, sculptures, poetic texts, furniture, or clothes can be ascribed to a particular style, but whether it is characteristic of any style to manifest itself through the features of different genres. Exactly the *diversity* of the principles of assimilation of the world makes the various features of art reciprocally indispensable. […] different arts model the same objects in different ways and give an indispensable scope, or artistic polyglotism, to artistic thought. But at the same time, every feature of

[10] The essay's title itself summarizes the concept of uni-multiplicity that we are here touching upon. Silvia Burini and Alessandro Niero (1998: 35, footnote) do not fail to stress that the Russian word *ansambl'* contains in itself the idea of a confluence of differences within complex interrelationships.

[11] In other words, the cultural richness springs from a vision of a world modelled on the visual arts, literature and music as much as on mathematics, logic and physics.

> art, by virtue of the full awareness of its specificity, requires the presence of other arts and of parallel artistic languages.

Lotman is deeply involved in the richness of reality and the ways through which man can elucidate this irreducible variety of objects and their plurality of thoughts. The paradox of human gnoseologic activity is that individuals, no less than societies, are seldom satisfied with a *single* way of expressing (or modelling) their reality, such as through a single art or by a single artistic text.[12] Instead, they need to inform their reality through multiple structures of thought – unitary and autonomous, but analogically related to one another. In this essay, Lotman emphasizes that languages' capability to model the *same*, *whole* world, i.e., to mirror it entirely from different points of view (iconic, musical, logic-symbolic, etc.), means that these multiple structures of thought, with their own language, are somehow equivalent or analogous – as the Leibnizian monads, we could say.

The first complete statement of this kind of mirroring dynamics between world and its objects[13] is found in the essay "Culture as collective mind and the problems of artificial intelligence" (1977). In this essay, Lotman underlines in a markedly cybernetic terminology that the world[14] is a supra-complex system constituted by cultural individualities, each of them organized around its own language and its own model of the world[15] – the sciences are a paradigmatic example of this because they are internally structured according to the episteme that individualizes them.[16] These autonomous individualities, however, stand in a relation of similarity with each other. The culture, being a meta-individuality with its own meta-language,[17] actually exceeds its components, imprinting upon them a singular identity, namely that of its unity. In this way, these individualities within the Individuality, though different from one another, are yet similar, since they have in common the same identity of the whole, once again relating like Leibiniz's monads. Thus, individualities are always

---

[12] Moreover, by virtue of this intertextual dynamics – often resulting in the phenomenon of syncretism – the artistic text gives rise to the idea that future times are already present and condensed in cultural texts, in form of potentialities. This refers again to the monad, where "the present is pregnant with the future" (Leibniz 1989b[1714]: 216). Cf. also footnote 23.

[13] The dynamics of this world are of a whole like its objects (the mirrors of the world) and simultaneously parts (individual fragments).

[14] This world is known by the subject, i.e. in its semiotized form of a culture-organism (from 1984 the latter will be called *semiosphere*).

[15] Cultural individuality is "a closed immanent world with its own internal structural-semiotic organization, its own memory, individual behaviour, intellectual capacities, and procedure for self-development" (Lotman 1979[1977]: 91).

[16] Obviously these individualities are in turn articulated internally in complex ways.

[17] According to Lotman, meta-language is the process of self-description made by a culture when it arrives at a certain, mature stage of its development.

in a relationship of reciprocal translation,[18] namely in a constant dialogue with one another, but at the same time they do not tend towards schizophrenia because they are bounded by the "circle" of cultural unity.

We can find the same vision of the interconnection between the individual and the universal in "Culture and organism" (1984), a work that, having abandoned the cybernetic terminology, is proposed as a prelude of the organicistic turn made by Lotman in the 1980s and summarized in the famous essay "On the semiosphere" (1984): a space full of interconnected texts that clearly recalls Leibniz's *plenum*, being the "tissue" composed according to a logic of infinite textual dividedness (Leibniz 1989b[1714], thesis 65). In "Culture and organism", Lotman starts with the consideration that the world (or universe) is supported by a *structural unity* and, by virtue of this unifying principle, "at the various levels of [its] organization, each and every aspect of matter has to reveal features of isomorphism"; and, Lotman continues: "from a certain point of view, it would be desirable to describe everything using an only meta-language" (Lotman 1985[1984]: 77).[19] With the word "isomorphism" (or structural unity) Lotman intends to say that culture shows a particular property, for which even very distant cultural bodies produce effects on one another in the cultural universe – this since they are in a permanent state of inter-communication by analogy with the whole: the reason for which the search of a meta-language is so important.[20]

This interpretation is evidenced by an essay dated 1989, "Culture as a subject and an object in itself" (1989), where Lotman talks about the "monad" in order to explain the relationship between the individual and the universal. According to Lotman, culture can be defined as a universe constituted by multiple universes that reflect the same characteristics – definiteness, self-sufficiency and presence of borders. By virtue of culture's capacity for self-reflection and self-description, which contains in itself all of its particular descriptions, these universes (or monads) are in a relationship of convergence and tend to create an "integrated wholeness", namely

[18] Lotman (1979[1977]: 93) emphasizes that translation is not an univocal transformation, but rather an approximate model, a resemblance, a metaphor. In this sense, the analogical mechanisms stand out as a fundamental gnoseologic tool, creating relationships, by similitude, of very different realities.

In order to make an in-depth analysis of the rule of analogy in the sciences see Hesse 1954, 1966.

[19] This topic is broadly developed by Lotman in *Unpredictable Mechanisms of Culture*, in particular in the chapters "A thinking structure" and "In place of a conclusion".

[20] This refers again to Leibniz's vision of the *plenum*, summarized in his reference to Hippocrates, (Leibniz 1989b[1714], thesis 61): "[T]his communication [among bodies] extends to any distance whatsoever. As a result, every body is affected by everything that happens in the universe, to such an extent that he who sees all can read in each thing what happens everywhere, and even what has happened or what will happen, by observing in the present what is remote in time as well as in space. "All things conspire [sympnoia panta]" said Hippocrates".

an antonymic unity in which different languages and different visions of the world are integrated in the cultural meta-language. It so happens that every monad, every cultural personality seems "like a decimal number obsessed by the idea of becoming a whole" (Lotman 1997[1989]: 12) – so a fundamentally self-referential whole but, at the same time, as a part of the whole-culture, every monad can only be in a relationship of translation with other monads.

This semantic "touch" of heterogeneous universes gives life to a fruitful mechanism of metaphorogenesis or infinite production of meaning by analogy, since translation is not an equivalence but a similarity.[21]

It is not difficult to understand why interdisciplinary dialogue in the sciences is of utmost importance to Lotman. First of all, the dialogue correlates the sciences in the light of the unity of human culture by expressing itself through different scientific visions of the world, making from them a single, unitary intellectual field of relational experience. Secondly, interdisciplinary dialogue maintains the specific identity of each science, namely of every single personality, or monad. Lastly, it produces the emergence of a fundamental feature of knowledge – namely its relational and collective nature.[22] Knowledge results from a "touch", an imperfect translation, that needs to interpolate itself through models founded on analogy (or similarity), sources of great heuristic creativity and linguistic-scientific metaphorogenesis.

The above reflections may help toward an understanding why the research of a common scientific language (meta-language) and the return to the "unified structure of knowledge" was so important for Lotman. According to him, the ideal unity is a contradiction of reality, which is anything but abstractly mono-perspective: its scientific modelling, as he suggests in *Culture and Explosion* (Lotman 2009[1992]: 24), must be based on the real dynamics of languages, always irreducible to one another but fatally and reciprocally necessary. Indeed he talks about "erroneous abstraction" when scientific modelling, as disembodied abstraction from reality, tends to be empty, distorting and utopian metaphorism, namely, creating a synthetic unity of differences, in which these are pragmatically reset.

As seen with the theological meta-knowledge that characterized the birth of Medieval *universitas* as meta-language, Lotman intends to search for a scientific language able to integrally unify the understanding of reality, placing in correlation the different forms of knowledge that bring along their own specific languages

---

[21] In *Unpredictable Mechanisms of Culture*, the production of metaphors is one of the features of the "explosion", which characterizes the creative processes of meaning (art and science).

[22] As Thomas Kuhn (1977, 1979) observed the construction of theories and models always occurs through a lexicon, thanks to which the scientific community can recognize relationships of analogy among objects of reality, already categorized by the collective linguistic filtration.

and theoretical apparatuses. In this way, epistemological and methodological particularities are not abandoned.[23]

The Aristotelian-Thomistic concept of a "unified structure of knowledge" is in this way returned to contemporary thought and rediscovered in its actuality.[24] It emerges as a heuristic *habitus*,[25] although in Lotman it is enriched by an eminently ethical character that aims to realize an open and intrinsically correlated science, never limited by a particular model of knowledge.[26] In this perspective, it is almost inevitable that Lotmanian semiotics results in an interdisciplinary dialogue and scientific polyglotism, being built entirely on the recognition of otherness as a "wayward comet in a calculated orbit" (Lotman 1994[1993]: 31). It is also built on the value of the new that always comes from the external world – another man, another thought, another scientific apparatus, another cultural system – and configurates itself as unpredictable and a creator of discovery. The dialogue dismantles what Lotman famously calls "the own", that is, in this case, the calculated and self-sufficient orbit of the different scientific disciplines.

---

[23] Jakobson writes: "[E]qual attention must be paid to the specifics in the structure and development of any given province of knowledge and, furthermore, to their common foundations and developmental lines as well as to their mutual dependence" (Jakobson 1971[1967]: 656).

[24] This rediscovery characterized more broadly the contemporary epistemology. Lotman was in fact well aware of the structural transformations (summarized in the paradigm switch of the so-called "Second Scientific Revolution") which were taking place in the world of sciences during those years. This is inferable from his introduction to the 1973 book *Ricerche semiotiche. Nuove tendenze delle scienze umane nell'URSS* [*Semiotic research: New tendencies of the humanities in the USSR*], in which he affirms, together with Uspenskij, that semiotics: (1) is a meta-knowing science because it expands the understanding of the knowledge, beyond the common sense; (2) is a relativizing science because it helps to clarify the semio-linguistic implications that underlie the scientific constructions (Lotman, Uspenskij 1973: xiii–xiv).

[25] In this way, Lotman brings to maturity the interdisciplinary tension that had characterized the lines of research of the Tartu-Moscow School of Semiotics since the beginning, even if these were deeply anchored in the hard sciences – a tendency evident also in Lotman's early writings. This path is well summed up by Vladimir E. Alexandrov (2000: 341–342) who comments: "Lotman's commitment to scientism – to a humanistic scholarship dedicated to the ideal of objectivity, but tempered by a clear sense of the inescapable vagaries of human experience – remained constant throughout his long and distinguished career. What changed was the kind of science on which he relied, in some of his earlier writings, he used concepts from physics and mathematics, experimented with algebraic formulations of "textual entropy", and considered applying cybernetics to literary studies. However, he subsequently abandoned these "hard" sciences, and, as the semiosphere essay shows, shifted to certain branches of biology and geology, sciences that he appears to have believed are more appropriate to culturology because they are "softer", more descriptive, and more integrative than analytical mathematical-physical ones".

[26] The work on language becomes therefore indispensable in an ethical-argumentative perspective, as does the work on discursive apparatuses of sciences.

References

Alexandrov, Vladimir E. 2000. Biology, semiosis, and cultural difference in Lotman's semiosphere. *Comparative Literature* 52(4): 339–362.

Antognazza, Maria Rosa 1994. Die Rolle der Trinitäts- und Menschwerdungsdiskussionen für die Entstehung von Leibniz' Denken. *Studia Leibnitiana* 26: 56–75.

– 1999. Immeatio and emperichoresis. The theological roots of harmony in Bisterfeld and Leibniz. In: Brown, Stuart (ed.), *The Young Leibniz and His Philosophy (1646–1676)*. Dordrecht: Kluwer, 41–64.

Balthasar, Hans U. von 1998[1961–1969]. *The Glory of the Lord. A Theological Aesthetics. IV: The Realm of Metaphysics in Antiquity*. San Francisco: Ignatius Press.

Burini, Silvia; Niero, Alessandro 1998. Notes. In: Jurij M. Lotman, *Il girotondo delle Muse. Saggi sulla semiotica delle arti e della rappresentazione*. Bergamo: Moretti & Vitali.

Hesse, Mary B. 1954. *Science and the Human Immagination*. London: SCM Press.

– 1966. *Models and Analogies in Science*. Notre Dame: University of Notre Dame Press.

Jakobson, Roman 1971[1967]. Linguistics in relation to other sciences. In: *Selected Writings II Word and Language*. Paris: The Hague, 655–696.

Jaspers, Karl 1959[1923]. *The Idea of the University*. Beacon Hill, Boston: Beacon Press.

Kuhn, Thomas 1977. *The Essential Tension. Selected Studies in Scientific Tradition and Change*. Chicago, London: University of Chicago Press.

– 1979. Metaphor in science. In: Ortony, Andrew (ed.), *Metaphor and Thought*. Cambridge: Cambridge University Press, 409–419.

Leibniz, Gottfried W. 1989a[1714]. *Principles of Nature and Grace Based on Reason*. In: *Philosophical Essays*. [Ariew, Roger; Garber, Daniel (eds.)] Indianapolis, Cambridge: Hackett Publishing, 206–213.

– 1989b[1714]. *The Principles of Philosophy or The Monadology*. In: *Philosophical Essays*. [Ariew, Roger; Garber, Daniel (eds.)] Indianapolis, Cambridge: Hackett Publishing, 213–225.

Lotman, Juri M. 1967. Metodi esatti nella scienza letteraria sovietica [Exact methods in Russian literary science]. *Strumenti critici* 1(2): 107–127.

– 1979[1977]. Culture as collective mind and the problems of artificial intelligence [Kul'tura kak kollektivnyj intellekt i problemy iskusstvennogo razuma]. *Russian Poetics in Translation*, 6. Oxford: Holdan Books, 84–96.

– 1985[1984]. La cultura e l'organismo [Kul'tura i organism]. In: *La semiosfera. L'asimmetria e il dialogo nelle strutture pensanti*. Venezia: Marsilio, 77–82.

– 1990. *Universe of the Mind: A Semiotic Theory of Culture*. London: Tauris.

– 1994[1993]. *Cercare la strada. Modelli della cultura* [Nepredskazuemye mehanizmy kul'tury]. Marsilio: Venezia.

– 1997[1989]. Culture as a subject and an object in itself [Kul'tura kak sub'ekt i sama-sebe ob'ekt]. *Trames* 1(1): 7–16.

– 1998[1974]. L'insieme artistico come spazio quotidiano [Hudozhestvennyj ansambl' kak bytovoe prostranstvo]. In: *Il girotondo delle Muse. Saggi sulla semiotica delle arti e della rappresentazione*. Bergamo: Moretti & Vitali, 23–37.

– 2005[1984]. On the semiosphere [O semiosfere]. *Sign Systems Studies* 33(1): 205–228.

– 2009[1992]. *Culture and Explosion*. [Clark, Wilma (trans.); Grishakova, Marina (ed.)] Berlin, New York: Mouton de Gruyter.

Lotman, Juri M.; Uspenkij Boris A. 1973. Introduction [Semioticheskie issledovaniya] to *Ricerche semiotiche: Nuove tendenze della scienze umane nell'URSS*. Torino: Einaudi, i–xvii.
– 1975[1973]. Myth – name – culture [Mif – imya – kul'tura]. In: *Soviet Studies in Literature: A Journal of Translations*. [Lucid, Daniel P. (trans., ed.)] 11(2/3): 17–46.
Morin, Edgar 1982[1977]. Le système, paradigme ou théorie? In: *Science avec conscience*. Paris: Fayard, 172–189.
– 2007. Le vie della complessità. In: Bocchi, Gianluca; Ceruti, Mauro (eds.), *La sfida della complessità*. Milano: Bruno Mondadori, 25–36.

Семиотика и интердисциплинарность: наследие Юрия Лотмана

Одним из краеугольных камней семиотической теории Лотмана является утверждение, что для понимания процессов культурной динамики языка одной отдельной науки будет недостаточно. В своей последней книге "Непредсказуемые механизмы культуры" Лотман подчеркивает, что перед наукой открывается перспектива единства методик, применяемых в гуманитарных и точных науках при изучении разных аспектов окружающего нас мира.

Целью данной статьи является рассмотрение отношения Лотмана к идеям науки, научности и методу интердисциплинарности, опираясь на его размышления о важности возврата к проблемам, волновавшим уже Аристотеля и средневековую науку, – к единой структуре научного знания.

Semiootika ja interdistsiplinaarsus: Lotmani pärand

Üheks Juri Lotmani semiootikateooria konkreetseks aspektiks on kahtlemata tunnistamine, et kultuurilisele dünaamikale aluseks olevaid protsesse pole võimalik mõista, kui võtta kasutusele üksainuke teaduslik keel.

Oma viimases teoses "Ennustamatud kultuurimehhanismid" rõhutab Lotman, et loodus- ja humanitaarteadustel tuleb püüelda ühildamatu ühtsuse poole sügava metakeelelise dialoogi kaudu. See saab toimuda üksnes arvestades selle antinoomiate tegelikkust, või teadvustades paljusust keelte seas, mille vastastikuseks eesmärgiks on väljendada objektide tegelikku, heterogeenset ning vastuolulist liikumist. Siit Lotmani ettepanek (mis on ühtlasi tema eetiline pärand), et tuleks tagasi pöörduda Aristotelese polühedraalse teaduste ühtsuse juurde.

Käesoleva artikli eesmärgiks on vaadata üle Lotmani suhe teaduse, teaduslikkuse ning interdistsiplinaarse meetodi ideedega, rõhutades tema viimaseid mõtisklusi sellest, kui oluline on pöörduda tagasi teadmise ühtsustatud, aristotelesliku struktuuri juurde või teaduse sellise kuju juurde, milles autonoomsetena üheskoos eksisteerivad erinevad ning mitte kunagi täielikult vastastikku tõlgitavad teaduskeeled, mis ühtlasi on omavahel dialoogis.